Engineer Marines build new TACAN power supply

By Sgt Brady Woods, I Marine Expeditionary Force Public Affairs

PAMPANGA, Philippines - Military aircraft use a Tactical Air Navigation (TACAN) system in order to locate a landing strip during inclement weather. A generator that runs off of diesel fuel usually powers the TACAN.

However, Gunnery Sgt. Michael Ott, the navigational aids chief for Marine Air Control Squadron 4 (MACS-4), Detachment Alpha, has found a way to power the system using items that were either found in the trash or old equipment that was reconfigured so that the TACAN could run off of solar power.

During the day the system is being run completely by solar power. However, the "Ott Box" uses twelve radio batteries to power the TACAN after sunset. Once the sun rises, the solar panels recharge the batteries and power the TACAN, simultaneously.

“My job is to provide TACAN services to Marine Corps aircraft,” said Ott. “The TACAN not only gives pilots a way to find an airfield even in the worst condition so that they can land safely, but also shows them other locations within the area.”

The total time to complete the build of the solar-powered solution for the TACAN took four months from on-paper to practical application, said Ott.

“There were some items that we had to purchase ourselves in order to make this work,” said Ott. “We had to buy some resistors, an AC inversion system and a charge control system.”

According to Ott, the “Ott Box” has been running for more than 600 hours of uninterrupted service.

“This is the future,” said Capt. Nicholas Astacio, the detachment commander for MACS-4, Det A. “It takes less manpower and the best part is that you don’t need any fuel to make it work.”

According to Astacio, using the generators only provides power to the TACAN for up to 72 hours before issues start to arise.

In order to see if this invention was worth it, Astacio got the approval from the MACS-4 commanding officer to bring the invention to Balikatan 2015 to gather data and provide justification for the production of this system.

Ott remarked that on a camping trip, the "Ott Box" could provide enough energy to not only power an entire living room of equipment but also the most frequently used kitchen appliances.